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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 14

Application Number: 10/021,682  
Filing Date: November 30, 2001  
Appellant(s): LAMOY ET AL.

Matthew J. Bussan  
For Appellant

**EXAMINER'S ANSWER**

**MAILED**  
**AUG 22 2003**  
**GROUP 1700**

This is in response to the appeal brief filed July 7, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

The rejection of claims 1-19 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

6,152,996	Linnersten et al.	11-2000
4,838,903	Thomaides et al.	06-1989
3,218,997	Berghout et al.	02-1963
4,962,371	Repp et al.	10-1990
5,327,744	Frawley et al.	07-1994
5,890,367	You et al.	04-1999

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 10, 11, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903).

Linnersten et al. ('996) disclose a filter ventilation system that can be used in existing compressed air systems that use a blower to supply a closed cabin, such as those used in military applications (col. 2, lines 4-19), comprising a concentric cylindrical air filter that includes an outer prefilter (15) for removing coarse particulates, a filter support screen (14) within the prefilter, a HEPA or ULPA filter (13) within the screen for removing up to 99.9999% of particulates at 0.12 micron, and a bed of carbon (12) within the HEPA or ULPA filter for

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adsorbing gases such as ammonia (see figure 2, col. 3, lines 10-55). Also disclosed is that the filter layers can be separately retained and removable for cleaning or replacement, and that the filters can be arranged for air flow in the opposite direction, entering the air cleaner along its axis and flowing radially outwardly through the layers with the particulate filter located inside of the sorbent filter (col. 5, lines 30-44). In this alternate, inside-out embodiment, the Linnersten filter layers anticipate the filter layer arrangement recited in the instant rejected claims. It is submitted that the presence of a blower to supply the closed cabin inherently anticipates a blower that is fluidly or pneumatically coupled to any part of the air-flow circuit, as recited in the claims. The cited references to Repp et al. ('371) and Frawley et al. ('744) each show that an over pressure is an inherent and necessary feature of such systems used to regulate airflow in military type closed cabins where the influx of chemical, nuclear and biological agents is prevented. One skilled in the art would also understand from reading the application of the prior art filter that the inside space (commercial or military aircraft cabins for example) would be maintained at a positive pressure because higher altitude pressures are unsafe for human passengers.

The instant claims differ from the disclosure of Linnersten et al. ('996) in that the arrangement of the filter layers are such that the prefilter is located within the second filter, that a pressure is provided from 0.5-1.5 in wg (method claims), and that a plenum couples the downstream side of the filter with the protected zone (claim 19). Although not disclosed explicitly, one having ordinary skill would understand that the prefilter will be located within the second filter when arranged in the inside-out embodiment described above, however a secondary reference is cited to clearly illustrate the obviousness of doing so.

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Thomaides et al. ('903) discloses a filter for removing aerosols and small particulates from air comprising multiple concentric layers that can be oriented orderly in any way so that air can flow inwardly or outwardly. Also disclosed is a conduit (plenum) for conducting the exit flow of multiple filters (figure 7; col. 1, lines 5-13; col. 6, lines 43-62).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) to include mounting of the filter in any suitable configuration governed by space constraints and the arrangement of the filter inlet and outlet and to use a plenum where multiple filters are used in parallel, such as in high-flow operations that could not be accommodated by a single filter assembly. The absolute pressure maintained within the enclosed space would have been obvious to one skilled in the art as determined by the desired efficiency of the system required.

Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of Berghout et al. ('997; col. 3, lines 17-35).

Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims except that a differential transducer is connected to the filter for showing an output proportional to the pressure sensed. Berghout et al. ('997) disclose an exhaust filter for gas in a radioactive material incinerator comprising pressure gages on either side of the filter for indicating the amount of pressure on the filter to show if it is plugged.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) in view of Thomaides et al. ('903) to

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include a filter differential transducer in order to show blockage of the filter so that it can be cleaned or replaced before efficiency is greatly reduced.

Claims 4, 5, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of Repp et al. ('371).

Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims as discussed above except that the enclosed area is maintained at 0.5-1.5 in wg and uses a transducer to measure pressure in the area and produce an alarm signal when the pressure drops below about 0.5 in wg. Repp et al. ('371) disclose a system for maintaining a pressure of greater than 0.4 in wg in a shipboard protected zone by measuring with a transducer and producing an output voltage proportional to zone overpressure with signal lights for notification (abstract; col.1, lines 8-27; col. 2, lines 59-67; col. 4, lines 9-15).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) in view of Thomaides et al. ('903) by including a transducer for maintaining a preferred pressure in the protected area with an indicator light in order to notify users of a drop in pressure so that maintenance repairs can be made before potentially harmful substances can intrude the area.

Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of Frawley et al. ('744).

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Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims as discussed above except that a pressure control valve is used to allow flow out of the enclosed area when pressure is greater than about 1.5 in wg. Frawley et al. ('744) discloses a filter system for maintaining a pressurized environment in military aircraft for protection against chemical, biological, or nuclear hazards, comprising a pressure control valve (52) for relieving excessive cockpit cooling airflow (abstract; col. 1, lines 34-42; col. 8, lines 15-30).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) in view of Thomaides et al. ('903) by using a pressure control valve to relieve an over-pressure in order to protect an enclosed area from being pressurized beyond a comfort zone for inhabitants and to prevent damage to components from internal pressure. Absent a proper showing of criticality or unexpected results, the preferred maximum pressure is considered to be a parameter that would have been routinely optimized by one having ordinary skill in the art so that the enclosed area is protected from external contamination without excessive pressurization.

Claims 7-9, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of You et al. ('367).

Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims as discussed above except that a coarse prefilter and heater are located upstream of the 3-layer filter and that cooling coils are disposed downstream of the 3-layer filter.

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You et al. ('367) disclose a filter system for a clean room comprising a series of air conditioners and filters located upstream and downstream of heaters and coolers and an air-blowing fan for the treatment of outside air for use in the room (abstract; col. 1, lines 34-49; col. 2, lines 15-28; col. 4, lines 13-39). It would have been obvious to one having ordinary skill in the art at the time of the invention to heat or cool the air flow of a protected room in order to control humidity and temperature of the air for the comfort of people using the room. Absent a proper showing of criticality or unexpected results, the preferred temperature and humidity of the air are considered to be parameters which would have been routinely optimized by one having ordinary skill in the art based on the desired comfort temperature of the users.

**(11) *Response to Argument***

Applicant argues in the second full paragraph of page 15 of the appeal brief that the examiner has used inherency to establish the obviousness of using a blower in the primary patent, however the presence of a blower in Linnersten is clearly disclosed (see col. 2, lines 13-17) as described in the rejection of claim 1 above. Even if blower is taken to be not disclosed, one having ordinary skill in the art would understand from reading the patent that a blower is necessary and inherent in a filtration system for an enclosed cabin where a pressure gradient will be crucial.

Applicant argues in the third full paragraph of page 16 that the examiner does rectify all of the deficiencies of the primary references with the teachings of the secondary references, however each of the deficiencies are addressed in the rejections above. With respect to the filter layer arrangements, they are disclosed in the primary reference, however if they are not taken to



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be disclosed, Thomaides discloses how a layered filter would be modified for different flow configurations. Although Thomaides discloses that an unsupported filter cannot be employed in systems with radially outward flow, the Linnersten apparatus uses supported filters. Providing a preferred positive pressure is submitted as being obvious to one having ordinary skill in the art using conventional knowledge.

Applicant also argues that the Thomaides patent is non-analogous art, however in this case, although Thomaides discloses different filter types than Linnersten, both patents disclose air filters having multiple layers that can be interchanged for air flow reversal.

On page 19, applicant argues that Thomaides fails to disclose a supply fan (blower) disposed upstream of a pressurized compartment, however it is noted that the features upon which applicant relies (i.e., that the supply fan is disposed downstream of, or in any specific location relative to the multistage filter or compartment) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims recite a blower or supply fan that is pneumatically or fluidly coupled to the downstream side of the filters, which is an inherent feature of any filter system having a circuit with a blower for forcing air through the filters. The claims do not recite a physical or structural relationship between the blower and filters other than the fluid coupling of parts. The blower is a disclosed feature of the Linnersten system that is inherently fluidly or pneumatically coupled to the filters.

Applicant states on page 20 that the examiner admits that none of the applied references teach or suggested the recited supply fan, however the fan is disclosed in Thomaides as discussed

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in the rejection and preceding paragraph. The reference to the exact locating of the fan in the final rejection addresses applicant's arguments concerning the fan location, but is unnecessary because the fan is only claimed to be fluidly or pneumatically coupled to the system, which is disclosed in Linnersten. Additionally, none of the other prior art patents are relied upon for motivating one to use a fan in the Linnersten system.

Applicant's arguments pertaining to the remaining secondary references are substantially the same as those addressed above and rely on the alleged faults of the rejection of the independent claims. Applicant further argues that the secondary references teach away from the instant invention, however each of the references are cited for a specific teaching of a single element that is deficient in the respective rejected claims, with a statement of obviousness. It is not believed that any of the cited references teach away from a system using the recited parts. For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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